УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ
UNIVERSITY OF BANJA LUKA
ПРИРОДНО-МАТЕМАТИЧКИ ФАКУЛТЕТ
FACULTY OF NATURAL SCIENCES AND MATHEMATICS

CHEMISTRY DEPARTMENT	SECOND CYCLE Master in Chemistry

Course name	**Coordination Chemistry**			
Course code	**Course status**	**Semester**	**Hours of instruction**	**ECTS**
2C16HEM012	elective	I	3+2	6
Teacher(s)	**Asst. Prof. Zvjezdana Sandić, PhD**			

Prerequisite course(s)	**Entry requrements**
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Course goals

The aim of this course is to study the chemistry of complex compounds, to get to know the structures and application of coordination compounds.

Learning outcomes

Students will be able to list and describe classes of coordination compounds. They will be able to explain their internal structure and connect their chemical properties with the chemical bonds, as well as the methods of analysis and characterization of complex compounds.

Course content

Complex salts and covalent chemical bonds. Heitler–London theory.
Mulliken's molecular-orbital theory.
Coordination theory. Coordination in space.
Donor - acceptor mechanism. Coordination and hybridization.
Magnetic properties of complex compounds. Types of magnetism. Magnetic classifications of complexes.
Ligand field theory. High-spin and low-spin states.
Stabilization energy in a crystal field.
Molecular-orbital coordination theory.
Coordination number and isomerism. Complexity of the complex. Reactivity of the complex.

Teaching methods

Lectures, computational and laboratory exercises

Books and other learning materials

F. A. Cotton and G. Wilkinson: **Advanced Inorganic Chemistry**, 5th edition, John Wiley & Sons, New York, 1988.
Drago Grdenić: **Molekule i kristali**, Školska knjiga, Zagreb, 2005.
Ivan Filipović i Stjepan Lipanović: **Opća i anorganska kemija**, I i II dio, Školska knjiga, Zagreb, 1995.
Vježbe**: Praktikum za laboratorijske vježbe**.

Course activities and grading method

The colloquium refer to the laboratory exercises and it is condition for taking the final exam. Two tests per semester -based on the lecture materials. The results are included in the final grade only if they exceed 50% of the predicted points for a given form of test during the semester.

Activity	**/**	**Tests**	**30**
Exit colloquium	**10**	**Final exam**	**60**

Additional course notes

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Name of the teacher who prepared this form	Zvjezdana Sandić

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